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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/724,040

11/28/2000

Manfred Boldy

DE91999009US1

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02/27/2003

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/724,040

Applicant(s)

BOLDY, MANFRED

Examiner

Abbas I Abdulsalam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections 35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishnan (USPN 6377685) in view of Stracener (USPN 4449024).

Regarding claims 12, 17 and 21, Krishnan teaches a primary key (112) including a convex shape button profile, and a concave shape secondary key (116), which may be constructed from materials of suitable characteristics. Krishnan teaches that when the primary key travels through stepped hole in the key cluster, and when the primary key is actuated, a shoulder in the primary key mates with steps in the secondary keys. Furthermore, Krishnan teaches detecting the depression in terms of concave cavity with which a key having stem is engaged. In addition, Krishnan teaches a convex button surface (118), which includes electrical traces (119) corresponding to functions on the concave upper surface (117). However, Krishnan does not disclose a pin extending from the base surface of the dome through the axial opening of the dome such that the tip of the pin extends axially beyond axial opening of the dome. See Fig 8 (A-B), col. 15, lines 38-52 and col. 8, lines 56-65. However, Krishnan does not specifically teach a dome rotationally symmetric about the axis. Krishnan on the other hand teaches the use of secondary keys each preferably displayed in the form of rectangular, trapezoidal and semi

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circular and other images that may be elongated to provide more finger contact. See col. 9, lines 27-29.

Therefore, it would have been obvious to utilize Krishnan's various available shapes of secondary keys to choose the desired profile. One would have been motivated in view of Krishnan that the available shapes such as trapezoidal is rotationally symmetrical.

Krishnan has described above. However, Krishnan does not teach a pin with a tip extending beyond the axial opening of the dome. Stracener on the other hand teaches a light diffuser plate (18) including multiple dome actuating pin guide sections (30), a pin with a body portion (32a), annular flange (32b), and projections (32c) below the flange. See col. 3, lines 36-43, Fig 2, Fig 3 and Fig 5.

Therefore it would have been obvious to one skilled in the art at the time the invention was made to modify Krishnan's cluster key arrangement to include Stracener's light diffuser plate. One would have been motivated in view of the suggestion in Stracener that the diffuser plate provides the desired dome with a pin-shaped projection configuration. The use of a light diffuser plate helps make up an effective keyboard assembly as taught by Stracener.

Regarding claims 13-14, 16, 20 and 23-24, Krishnan teaches a cluster key configuration. See Fig 8 (A-B)

Regarding claim 19, Stracener teaches symmetrically arranged switch sites (21) and dome retainer (22), which has an adhesive underside disposed on multiple domes (33). See col. 2, lines 64-68 and Fig 2.

Regarding claim 18, krishnan teaches secondary keys in different shapes such as trapezoidal and circular. See col. 9, lines 27-29.

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Regarding claims 22 and 25, See Stracener's Fig.2 including domes (23) and a dome seal (22).

Regarding claims 15, Stracener teaches a light diffuser, which includes dome actuating pin guide sections (30) and projections (32c).

Conclusion

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 6,170,123 to Holland-Letz

U.S. Pat. No. 5,399,823 to McCusker

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3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to crystal park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Abbas Abdulsalam

Examiner

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